

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

Rule making related to separation distance rules

The Environmental Protection Commission (Commission) hereby amends Chapter 9, “Delegation of Construction Permitting Authority,” Chapter 40, “Scope of Division—Definitions—Forms—Rules of Practice,” Chapter 43, “Water Supplies—Design and Operation,” and Chapter 49, “Nonpublic Water Supply Wells,” Iowa Administrative Code.

Legal Authority for Rule Making

This rule making is adopted under the authority provided in Iowa Code section 455B.173.

State or Federal Law Implemented

This rule making implements, in whole or in part, Iowa Code sections 455B.173, 455B.174 and 455B.183.

Purpose and Summary

Collectively, Chapters 9, 40, 43, and 49 regulate certain aspects of both public and private water supply systems. This rule making includes three broad amendments: two substantive changes aimed at easing regulatory burdens and one editorial change to reflect recently amended state law.

First, the amendment to Chapter 9 aligns the rules with 2020 Iowa Acts, House File 2475. This legislation amended Iowa Code section 455B.183(2) to allow local public works departments to retain a professional engineer in lieu of directly employing an engineer. The Department of Natural Resources (Department) has been enforcing the law since its passage.

Second, amendments to Chapter 43 ease certain aspects of the water main separation requirements. Under the previous rules, the Department had to issue many design- or construction-based variances in order to proceed with permitting; this was burdensome for permittees, consulting engineers, and staff. The amendments incorporate siting and construction alternatives developed from the variances directly into the rules. In more detail, the amendments:

- Separate definitions of the crossing requirements for sanitary sewers and storm sewers.
- Add an option for installation of casing pipe around water mains when there is a crossing conflict involving both sanitary and storm sewers (in lieu of replacing sewers with water main material).
- Add options for horizontal separation and crossing conflicts with storm sewers, including:
 - Constructing water mains of ductile iron piping (DIP) with gaskets impermeable to hydrocarbons.
 - Constructing storm sewers of reinforced concrete piping (RCP) with gaskets impermeable to hydrocarbons.

These changes are similarly protective of the environment while easing regulatory burdens on permittees and consulting engineers.

Third, the amendments to Chapters 40, 43, and 49 add clarity to well separation distances from sources of contamination. Previously, well separation distances varied slightly between programs, as did the naming conventions. Under the final rule amendments, sources of contamination will now be consistently named and the distances will be more uniform. In more detail, the amendments:

- Add a transmission pipeline setback because two other states that border Iowa currently apply this category and because the Department does not have a setback that addresses this scenario. These distances are in line with or are in between the distances set by the two surrounding states with similar regulations.

- Change the term “sanitary landfills” to “solid waste landfills and disposal sites” to match Table A in subrule 43.3(7).
- Change the distance for the preparation or storage area for chemicals to accord with Chapter 44 of the Department of Agriculture and Land Stewardship rules (rule 21—44.53(200)).
- Change the terms “conforming wells” and “nonconforming wells” to “existing wells that conform to this chapter” and “existing wells that do not conform to this chapter,” respectively, to eliminate confusion.
- Change the term “ditches, streams, ponds, or lakes” to “flowing streams or other surface water bodies.” This clarifies that this term applies to water bodies and will match Table A in subrule 43.3(7).
- Add a separate category for liquid propane gas (LPG) storage tanks and assign a setback similar to that for all of the surrounding states. Previously, Iowa used a setback of 100 feet for both liquid propane (LP) and other liquid fuel storage tanks. Other surrounding states have adopted a lesser setback because an LPG spill is not like other gas spills, since propane is volatile.
- Change the language regarding open and closed portions of private sewage disposal systems to match the amendments proposed for Table A in subrule 43.3(7).
- Add the word “yard” in front of “hydrants” because this separation distance applies specifically to private wells near yard hydrants.
- Remove the word “ditches” from the term “ditches, streams, ponds, or lakes” and add a separate setback for roadside ditches and rights-of-way that is similar to that for several surrounding states. This will help reduce confusion with the current setback that includes ditches along with streams, ponds, and lakes.
- Add three new footnotes to Table 49.6(1) in subrule 49.6(1) to clarify the new and changed terms.

Public Comment and Changes to Rule Making

Notice of Intended Action for this rule making was published in the Iowa Administrative Bulletin on November 17, 2021, as **ARC 6037C**. A virtual public hearing was held on December 9, 2021, at 1 p.m. via video/conference call. No one attended the public hearing. No public comments were received. No changes from the Notice have been made.

Adoption of Rule Making

This rule making was adopted by the Commission on January 19, 2022.

Fiscal Impact

This rule making has no negative fiscal impact to the State of Iowa. A copy of the fiscal impact statement is available from the Department upon request.

Jobs Impact

After analysis and review of this rule making, no impact on jobs has been found. A copy of the jobs impact statement is available from the Department upon request.

Waivers

Any person who believes that the application of the discretionary provisions of this rule making would result in hardship or injustice to that person may petition the Department for a waiver of the discretionary provisions, if any, pursuant to 561—Chapter 10.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rule making by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rule making at its [regular monthly meeting](#) or at a special meeting. The Committee’s

meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rule making will become effective on March 16, 2022.

The following rule-making actions are adopted:

ITEM 1. Amend subrule 9.4(3) as follows:

9.4(3) The reviewing engineer shall be licensed as a professional engineer in Iowa and shall be employed or retained by the local public works department.

ITEM 2. Amend rule **567—40.2(455B)**, definition of “Septic tank,” as follows:

“*Septic tank*” means a watertight ~~tank which receives sewage~~ structure into which wastewater is discharged for solids separation and digestion.

ITEM 3. Rescind subparagraph **43.3(2)“a”(3)** and adopt the following new subparagraph in lieu thereof:

(3) Separation of water mains from sanitary and combined sewers.

1. Horizontal separation of water mains from gravity sanitary and combined sewers. Water mains shall be separated from gravity sanitary and combined sewer mains by a horizontal distance of at least ten feet measured edge to edge unless the bottom of the water main is at least 18 inches above the top of the sewer, and either:

- The water main is placed in a separate trench, or
- The water main is located on a bench of undisturbed earth at a minimum horizontal separation of three feet from the sewer.

If it is not possible to obtain a horizontal separation of three feet and a vertical separation of 18 inches between the bottom of the water main and the top of the sewer, a linear separation of at least two feet shall be provided, and one of the following shall be utilized:

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or
- The sewer shall be constructed of water main materials.

The separation distance between the water main and the sewer shall be the maximum feasible in all cases.

2. Horizontal separation of water mains from sanitary sewer force mains. Water mains shall be separated from sanitary sewer force mains by a horizontal distance of at least ten feet measured edge to edge unless the sanitary sewer force main is constructed of water main materials and the water main is laid at least four feet horizontally from the sanitary sewer force main. The separation distance between the water main and the sanitary sewer force main shall be the maximum feasible in all cases.

3. Vertical separation of water mains from sanitary and combined sewer crossovers. Vertical separation of water mains crossing over any sanitary or combined sewers shall be at least 18 inches when measured from the bottom of the water main to the top of the sewer. If it is not possible to maintain the required vertical separation, one of the following shall be utilized:

- The bottom of the water main shall not be placed closer than six inches above the top of a sewer, or
- The top of the water main shall not be placed closer than 18 inches below the bottom of a sewer.

When a water main crosses below or less than 18 inches above a sanitary or combined sewer, one of the following shall be utilized within ten feet measured edge to edge horizontally, centered on the crossing:

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight ends, or
- Sewer pipe of water main material shall be installed.

The separation distance shall be the maximum feasible in all cases. Wherever a water main crosses a sanitary or combined sewer, the water main and sanitary or combined sewer pipes must be adequately

supported. A low permeability soil shall be used for backfill material within ten feet of the point of crossing along the water main.

4. Horizontal separation of water mains from sanitary and combined sewer manholes. No water pipe shall pass through or come in contact with any part of a sanitary or combined sewer manhole. A minimum horizontal separation of three feet shall be maintained.

ITEM 4. Adopt the following new subparagraph **43.3(2)“a”(4)** as follows:

(4) Separation of water mains from storm sewers.

1. Horizontal separation of water mains from gravity storm sewers. Water mains shall be separated horizontally from gravity storm sewers by at least ten feet measured edge to edge. If it is not possible to maintain the required horizontal separation of ten feet, a minimum of three feet of separation shall be maintained and one of the following shall be utilized within ten feet measured edge to edge:

- The water main shall be constructed of ductile iron pipe with gaskets impermeable to hydrocarbons, or
- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or
- Storm sewer pipe of water main material shall be installed, or
- Reinforced concrete pipe storm sewers shall be constructed with gaskets manufactured in accordance with ASTM C443.

2. Vertical separation of water mains from storm sewer crossovers. Water mains shall be vertically separated from storm sewers by at least 18 inches between the outside edges of the water main and the storm sewer. The separation distance shall be the maximum feasible in all cases. In all cases where a water main crosses a storm sewer, the water main and storm sewer pipes must be adequately supported. A low permeability soil shall be used for backfill material within ten feet of the point of crossing along the water main. If it is not possible to obtain 18 inches of vertical separation where the water main crosses above a storm sewer, a minimum of 6 inches vertical separation shall be maintained and one of the following shall be utilized within ten feet measured edge to edge horizontally, centered on the crossing:

- The water main shall be constructed of ductile iron pipe with gaskets impermeable to hydrocarbons, or
- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or
- Storm sewer pipe of water main material shall be installed, or
- Reinforced concrete pipe storm sewers shall be constructed with gaskets manufactured in accordance with ASTM C443.

ITEM 5. Amend subparagraph **43.3(7)“c”(3)** as follows:

(3) Surface water sources. Water samples collected from surface water sources in accordance with 43.3(7) “c”(1) should be collected prior to the design of the surface water treatment facility and shall be conducted and analyzed prior to utilization of the source. The samples shall be collected during June, July, and August. In addition, quarterly monitoring shall be conducted in March, June, September, and December at a location representative of the raw water at its point of withdrawal. Monitoring shall be for turbidity, alkalinity, pH, calcium, chloride, color, copper, hardness, iron, magnesium, manganese, potassium, silica, specific conductance, sodium, sulfate, filterable and nonfilterable solids, carbonate, bicarbonate, algae (qualitative and quantitative), total organic carbon, five-day biochemical oxygen demand, dissolved oxygen, surfactants, nitrogen series (organic, ammonia, nitrite, and nitrate), and phosphate.

TABLE A: SEPARATION DISTANCES

SOURCE OF CONTAMINATION	REQUIRED MINIMUM LATERAL DISTANCE FROM WELL AS HORIZONTAL ON THE GROUND SURFACE, IN FEET	
	Deep Well ¹	Shallow Well ¹
WASTEWATER STRUCTURES:		
Point of Discharge to Ground Surface		
Sanitary & industrial discharges	400	400
Water treatment plant wastes	50	50
Well house floor drains	5	5
Sewers & Drains ²		
Sanitary & storm sewers, drains	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Sewer force mains	0 – 75 feet: prohibited 75 – 400 feet if water main pipe 400 – 1000 feet if sanitary sewer pipe	0 – 75 feet: prohibited 75 – 400 feet if water main pipe 400 – 1000 feet if sanitary sewer main pipe
Water plant treatment process wastes that are treated onsite	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer pipe	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer main pipe
Water plant wastes to sanitary sewer	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Well house floor drains to sewers	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer pipe	0 – 25 feet: prohibited 25 – 75 feet if water main pipe 75 – 200 feet if sanitary sewer main pipe
Well house floor drains to surface	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer pipe	0 – 5 feet: prohibited 5 – 50 feet if sanitary sewer main pipe
Land Disposal of Treated Wastes		
Irrigation of wastewater	200	400
Land application of solid wastes ³	200	400
Other		
<u>Cesspools & earth pit privies</u> <u>Private sewage disposal systems</u> <u>and onsite treatment systems –</u> <u>open portion of treatment system⁴</u>	200	400
<u>Concrete vaults & septic tanks</u> <u>Private sewage disposal systems</u> <u>and onsite treatment systems</u> <u>– closed portion of treatment</u> <u>system⁴</u>	100	200
Lagoons	400	1000
Mechanical wastewater treatment plants	200	400
Soil absorption fields	200	400
CHEMICALS:		
Chemical application to ground surface	100	200
Chemical & mineral storage above ground ^{5,6}	100	200
Chemical & mineral storage on or under ground	200	400

SOURCE OF CONTAMINATION	REQUIRED MINIMUM LATERAL DISTANCE FROM WELL AS HORIZONTAL ON THE GROUND SURFACE, IN FEET	
	Deep Well ¹	Shallow Well ¹
Transmission pipelines (such as fertilizer, liquid petroleum, or anhydrous ammonia)	200	400
ANIMALS:		
Animal pasturage	50	50
Animal enclosure	200	400
Earthen silage storage trench or pit	100	200
Animal Wastes		
Land application of liquid or slurry	200	400
Land application of solids	200	400
Solids stockpile	200	400
Storage basin or lagoon	400	1000
Storage tank	200	400
MISCELLANEOUS:		
Basements, pits, sumps	10	10
Cemeteries	200	200
Cisterns	50	100
Flowing streams or other surface water bodies	50	50
GHEX loop boreholes	200	200
Railroads	100	200
Private wells	200	400
Solid waste landfills and disposal sites ^{4 7}	1000	1000

¹Deep and shallow wells, as defined in 567—40.2(455B): A deep well is a well located and constructed in such a manner that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn. A shallow well is a well located and constructed in such a manner that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

²The separation distances are dependent upon two factors: the type of piping that is in the existing sewer or drain, as noted in the table, and that the piping was properly installed in accordance with the standards.

³Solid wastes are those derived from the treatment of water or wastewater. Certain types of solid wastes from water treatment processes may be land-applied within the separation distance on an individual, case-by-case basis.

⁴Private sewage disposal system is defined in 567—subrule 69.1(2). “Onsite treatment system” includes any wastewater treatment system not included in the definition of a private sewage disposal system that is utilizing onsite wastewater treatment technologies to treat domestic waste, such as those specified in 567—Chapter 69 (but excluding waste stabilization ponds). Open portions of treatment systems include subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters, and waste stabilization ponds. Closed portions of treatment systems include septic tanks, aerobic treatment units, fully contained media filters and impervious vault toilets. These separation distances also apply to septic systems that are not considered privately owned.

⁵The minimum separation distance for liquid fuel storage associated with standby power generators shall be 50 feet if secondary containment is provided. Secondary containment shall provide for a minimum of 110 percent of the liquid fuel storage capacity. Double-walled storage tanks shall not be considered as secondary containment. The separation distance for liquefied petroleum gas (LPG) storage shall be 15 feet.

⁶Electrical power transformers mounted on a single utility pole are exempt from the minimum separation distance requirements.

^{4 7}Solid waste means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

ITEM 6. Amend subrule 49.6(1) as follows:
49.6(1) Minimum distances. The following minimum lateral distances from all private wells shall apply for the common structures or sources of contamination listed in the following table.

Table 49.6(1) Minimum Lateral Distances, Private Wells

Sources <u>Structure or Source of Contamination</u>	Minimum Lateral Distance (feet)	
	<u>Shallow Well¹</u>	<u>Deep Well¹</u>
<u>Public water supply well</u>	<u>400</u>	<u>200</u>
Formed manure storage structure, confinement building, feedlot solids settling facility, open feedlot	200	100
Public water supply well	400	200
<u>Transmission pipelines (including, but not limited to, fertilizer, liquid petroleum, or anhydrous ammonia) if a more restrictive setback is not set by the pipeline owner</u>	<u>200</u>	<u>100</u>
		<u>All Private Wells</u>
Earthen manure storage basin, runoff control basins and anaerobic lagoons (see subrule 49.6(2) below)		1000
<u>Drainage wells</u>		<u>1000</u>
Domestic wastewater lagoon		400
Sanitary landfills <u>Solid waste landfills and disposal sites²</u>		1000
<u>Domestic wastewater lagoon</u>		<u>400</u>
Preparation or storage area for spray materials, commercial fertilizers or chemicals that may result in groundwater contamination	400	150
Drainage wells		1000
Conforming wells		40
Nonconforming <u>Existing wells that do not conform to this chapter</u>		100
<u>Liquid hydrocarbon storage tanks, except for liquid propane gas (LPG)</u>		<u>100</u>
Soil absorption field, any sewage treatment system with an open discharge, pit privy or septic tank discharge line (not conforming to 567—Chapter 69) <u>Private sewage disposal systems – open portion of treatment system³</u>		100
Septic tank, concrete vault privy, sewer of tightly joined tile or equivalent material, sewer-connected foundation drain, or sewers under pressure <u>Private sewage disposal systems – closed portion of treatment system³</u>		50
<u>Flowing streams or other surface water bodies</u>		<u>25</u>
<u>LPG storage tanks</u>		<u>15</u>
<u>Roadside ditch and road rights-of-way</u>		<u>15</u>
<u>Existing wells that conform to this chapter</u>		<u>10</u>
Sewer of cast iron with leaded or mechanical joints, sewer of plastic pipe with glued or compression joints, independent clear water drains, cisterns, well pits, or pump house floor drains		10

	<u>All Private Wells</u>
Hydrants <u>Yard hydrants</u>	10
Property lines (unless a mutual easement is signed and recorded by both parties)	4
Liquid hydrocarbon storage tanks	100
Ditches, streams, ponds, or lakes	25
Frost pit	10
<u>Property lines (unless a mutual easement is signed and recorded by both parties)</u>	<u>4</u>

¹“Deep well” and “shallow well” are defined in 567—49.2(455B).

²Solid waste means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

³Private sewage disposal system is defined in 567—subrule 69.1(2). Open portions of treatment systems include subsurface absorption systems, mound systems, intermittent sand filters, constructed wetlands, open bottom media filters, and waste stabilization ponds. Closed portions of treatment systems include septic tanks, aerobic treatment units, fully contained media filters, and impervious vault toilets. These separation distances also apply to septic systems that are not considered privately owned.

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